II. Position of the Soviet Bloc in the Cold War, Mid-1955.

This section presents estimates of the supply position of the Soviet Bloc and the consumption pattern of the USSR under peacetime conditions for the year ending in mid-1955. The section contains (1) the base-year chart of the resources available in 1951 and their consumption pattern, given in Table 1;* (2) indexes of consuming industry growth used for the projection of consumption patterns up to the year ending in mid-1955, given in Table 2;** (3) the chart for the year ending in mid-1955, given in Table 3;*** (4) a table of surpluses and deficits as a percentage of mid-1955 supply, given in Table 4;**** (5) for each material a brief analysis of its supply position, including a description of adjustments made to the projected consumption figures; and (6) conclusions.

The chart for the base year, 1951, given in Table 1, contains the detailed consumption and supply data from which are made the projections for mid-1955. Each row is devoted to one of the 14 individual material resources. The columns are the consuming industries for the USSR, including exports, stockpiling change, and total demand. In addition, there are columns for production, imports, and total supply for the USSR. Columns are provided for European Satellite production and Chinese Communist production, and Soviet Bloc stockpile, but these data are not included in the total supply figure. Details on the preparation of the base-year table are included in the preceding section.

A. Indexes of Consuming Industry Growth Rates.

The indexes used in converting the quantities of materials consumed in 1951 to those consumed in the year ending in mid-1955 are given in Table 2. These indexes reflect the growth of these consuming industries during that period.

The use of these indexes involves the assumption that each raw material or resource consumed by an industry increased in the same proportion as production for that industry increased in the period 1951 to mid-1955. There are some notable exceptions to this, such as the substitution of hydroelectric for thermal electric stations as a source of electric power, thereby causing coal consumption in the electric power industry to increase less rapidly

* P. 13, above.
** P. 16, below.
*** P. 19, below.
**** P. 21, below.

Table 2

Indexes of Production Growth by Consuming Sector in the USSR
1951 to Year Ending Mid-1955

Sector	1951 = 100 Index
Agriculture and Food Products	113
Textiles and Apparel	119
Logging, Pulp, Paper, Sawmills, Wood and Paper Products	104
Chemicals and Rubber	147
Coal and Coke	129
Petroleum and Petroleum Products	142
Electric Power	156
Iron and Steel	141
Copper	180
Aluminum	273
Other Nonferrous Metals and Nonmetallic Minerals and Products	185
Agricultural, Construction, and Mining Machinery	153
Machine Tools and Metalworking Machinery	126
Industrial Machinery	150
Electrical and Communications Equipment	163
Automotive Equipment	115
Ships and Boats	134
Locomotives and Railroad Cars	115
Miscellaneous Manufacturing Industries, Including Consumer Durable Goods	133
Rail Transport	125
Water Transport	140
Motor and Other Transport	149
Trade, Services, and Households	119
Construction	138
Army, Navy, and Air Force	127

over the period than over-all electric power production. Allowance must therefore be made for such special circumstances, after the indexes have been applied, to determine the preliminary consumption estimates. The adjustments made for individual materials are given in the material resources sections which follow.

The mid-1955 stockpiling change estimates were derived for the materials involved by applying the 1951 ratio of stockpiling change to production to the mid-1955 production figure. An exception is the case of rubber, for which a separate estimate was made.

B. Empirical Result.

1. General.

For the 14 resources tested, the mid-1955 cold-war position of the economy is substantially balanced. Approximate balances appear for coal, petroleum products, crude steel, copper, ammonia, antifriction bearings, and manpower. Slight surpluses are indicated for electric power and rubber. Somewhat larger surpluses exist in aluminum, lead, zinc, and toluene. There are no significant deficits. The product mix in petroleum products seems out of balance, with a surplus in petroleum distillates about equal to the deficit in petroleum residuals.

2. Coal.

The coal industry shows a deficit of 13,950,000 metric tons, with a total supply of 369,250,000 and a total demand of 383,200,000 metric tons. It seems highly doubtful, however, that such a deficit will in fact exist for the year ending in mid-1955. There appears to be no basic resource limitation if the USSR is willing to invest the capital equipment and labor necessary for proper mining. Reserves are generally adequate. It appears to be largely a matter of priority whether or not the USSR produces to meet almost any level of demand.

3. Petroleum Products.*

The figures on petroleum distillates in Table 3 were altered to reflect greater usage in the agricultural sector. Petroleum

* Petroleum distillates include reciprocating engine aircraft fuels, motor gasolines, naphtha, ligroin, kerosine-type jet aircraft fuels, lighting and heating kerosines, tractor kerosines, distillate fuel oils,

inputs are not a direct function of the output of agriculture but rather of the park of mobile equipment in that sector. The park is growing faster than output in the USSR, and for that reason the petroleum product input was altered to reflect this situation. In addition, petroleum distillates imports were increased by about 1,500 metric tons for the year ending mid-1955. The projected-year consumption estimates were made to conform to the latest petroleum consumption estimates, despite some small differences with the projected procedure outlined earlier.

The total petroleum production position of the USSR is in approximate balance for mid-1955. There appears, however, a surplus of petroleum distillates and a shortage of petroleum residuals. The product mix of petroleum products can usually be altered to meet the demand, especially if the shortage is for less refined products. For mid-1955, petroleum products do not constitute a limiting factor for the Soviet economy.

4. Copper.*

Alterations were made to a straight projection of 1951 consumption figures. The mid-1955 consumption of copper by all manufacturing industries from agricultural, construction, and mining machinery through miscellaneous manufacturing industries in Table 3 was increased by 5 percent to allow for the improved copper supply situation as compared with the base year, 1951, when allocations were more severely restricted.

In the early postwar period and up to 1952 or 1953 the lack of copper hampered the fulfillment of Soviet Plan goals and made necessary the use of inferior products. The rate of growth of the production of copper, however, has been substantial, and the Soviet supply position has been gradually improving. A continued need for imports is indicated by a slight surplus (imports are a part of supply) in copper shown in Table 4. The tabulation for copper shows a 2-percent surplus for the year ending in mid-1955. This estimate includes imports into the USSR from non-Soviet Bloc sources of 30,000 metric tons and allows for addition to stockpiles of 45,500 metric tons. While too small a figure to be positive evidence of a surplus or deficit in mid-1955, it does indicate a need for care in copper allocations.

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diesel fuels, and petroleum solvents. Petroleum residuals include lubricating oils, residual fuel oils (mazut), topped crude oils, asphalts, waxes, and miscellaneous compounds and lubricants.

* Copper includes primary and secondary copper.

Table 3

Material Balances for Selected Resources in the USSR, Production in the European Satellites and Communist China, and Stockpiles in the Soviet Bloc, Year Ending Mid-1955

		Agriculture and Food Products	Textiles and Apparel	Logging and Paper Products	Chemicals and Rubber	Coal and Coke	Petroleum and Petroleum Products	Electric Power	Iron and Steel	Copper	Aluminum	Other Nonferrous Metals and Nonmetallic Minerals and Products	Agriculture, Construction and Mining Machinery	Machine Tools and Metalworking Machinery	Industrial Machinery	Electrical and Communications Equipment	Automotive Equipment	Ships and Boats	Locomotives and Railroad Cars	Miscellaneous Manufacturing Industries Including Consumer Durable Goods	Rail Transport	Water Transport	Motor and Other Transport	Trade Services and Households	Construction	Exports to Bloc	Exports to Non-Bloc	Stockpiling Change	Army	Navy	Air Force	Total Demand USSR	Production USSR	Imports from Bloc	Imports from Non-Bloc	Total Supply USSR	Surplus	Deficit	European Satellite Production	Chinese Communist Production	Soviet Bloc Stockpile
1. Coal	Thousand MT	2 250	7,150	4 150	1 900	68 950		80 050	5 050	950	4 250	37 270	750	200	250	650	1 200	150	150	2 550	85,050	4 450	1,250	41 300	550	400	470		15 570	1 570	1 150	383 200	360,000	9,250		369 250		13 950	108,800	85,245	
2. Petroleum Distillates	Thousand MT	12 300		100	150	17		440				150								1,010	570	740	8 880	5 180	2 620	490	450			3,125		36,155	34 990	4,160		32 150	2,995		9,620	250	
3. Petroleum Residuals	Thousand MT	690		18	160		1 700	5,020	2 300		80	60			530		70	160	60	5,000	990	2 880	430		520	210	150			1,875		22,875	17 370	1,390		18 560		1 135	5,250	290	
4. Total Petroleum Products	Thousand MT	12 990		110	590	10	1 700	5 460	1 800		80	210			330		70	160	60	6 025	1 560	3 620	1 290	5 180	3 140	690	600			5,000		59 030	52 160	5,550		57 710		5,380	14,850	540	
5. Electric Power	Million KWH	3 600	4 200	2 300	17 200	7 100	5 300	85 000	12,770	1,800	13 400	12 400	2 800	670	1 800	1 400	700	100	300	5,600	3 100			18,000	400					8 700		151,000	160,000			160,000	9 000		73,600	12,300	
6. Crude Steel	Thousand MT	10	10	10	60	100	1 400		28 720	25		170	3 340	1 520	3,080	2 180	1,780	480	1 330	2,370	500	30			5,800				1 070	340	110	42,850	42,500			42,500		350	10,700	2,300	
7. Copper	Thousand MT				9 0				5 5			1 0	15 1	12.0	87 0	280 5	17 0	7.0	12.0	97 0	16 5	0 5	0 5					45.8	10.0	5 5	22.0	479 5	437 5		50.0	487.5	8.0		71.5	12 0	340.0
8. Aluminum	Thousand MT				4 5		3 0		18 0	2 0	1.5	80 5	6.1	2.0	17 1	13.0	3 5	2 5	2.5	136 0					18.1			136 0			59 5	484.5	546.1			546.1	61 5		139 1	3 0	401.0
9. Lead	Thousand MT				55 5				5.0	5 7		37 0				58 5				8 5					1 0			20.0		6.0		193 5	240 1			240 1	46.5		106.0	14.0	128 5
10. Zinc	Thousand MT				6.0				11.5	18 0		66 5	2 5	0 5	5 0	10.0	12 5		1.0	18 5					5.0			11 5		6 0		208.5	259 5			260 0	51.0		188 5	7 5	203.0
11. Ammonia (N content)	Thousand MT	285	10	5	90		4		5															5						175		575	575			575			620	59	
12. Toluene	Thousand MT				35		15																			5		16		15		89	100			100	11		26	1	87
13. Rubber	Thousand MT	25	65	10	5		15			25						15					5		65	45	15			50	50		5	405	345	20	65	430	25		105		350
14. Antifriction Bearings	Million Units												14 0	5 5	15 5	6 5	26 5	1 5	1 5	2 0						2.0			10.0	2 5	26 0	111.5	137.5	1.0	1.5	139.0		5 5	26.0	1 5	
15. Manpower	Thousand Man Years	51 100	5 850	5 050	600	5 250	400	450	5 250		800			7 500		550	150	500	50	a/	1,550	350	3 800	18 050	4 350				1 250	875	875	104 300	102 700			108,700		3,600	48,600	250 000	

a/ Included in Agricultural, Construction, and Mining Machinery; Machine Tool and Metal working Machinery; and Industrial Machinery.

5. Aluminum.

The surplus for primary aluminum production comes to 61,500 metric tons. This result is in spite of an increase of 60,000 metric tons in the aluminum consumption of miscellaneous manufacturing industries over the projected figure to approximate an announced total allocation for utensils averaging 98,500 metric tons for the years 1954 and 1955.

Some of the surplus of 61,500 tons may be stockpiled. For part of the remainder, aluminum consumption may have increased disproportionately in the electrical industry for wiring and also in the construction industry as a steel substitute.

Table 4

Material Surpluses or Deficits in the Soviet Bloc a/
Year Ending Mid-1955

Item	Percent of Total Supply	
	Surplus	Deficit
1. Coal		4
2. Petroleum Distillates	8	
3. Petroleum Residuals		23
Total Petroleum		2
4. Electric Power	6	
5. Steel		1
6. Copper	2	
7. Aluminum	11	
8. Lead	19	
9. Zinc	20	
10. Ammonia		
11. Toluene	11	
12. Rubber	6	
13. Antifriction Bearings		2
14. Manpower		2

a. Derived from the surplus, deficit, and total supply columns of Table 3.

Aluminum, through about 1952, was regarded as being in short supply. The additions to capacity in the past few years and estimates of future production indicate clearly that the USSR has a sufficient supply of aluminum.

6. Lead and Zinc.

The sizable surpluses of primary lead and zinc in the USSR for the year ending in mid-1955 are caused by estimates of large production increases since 1953 not matched by allocations to consumers, whose needs are not growing so rapidly.

7. Ammonia.

Table 3 indicates an exact balance for ammonia, which is expressed in terms of its nitrogen content. The possibilities for error lead to the conclusion that the supply of ammonia, while not plentiful, should be adequate if carefully allocated.

8. Toluene.

The results for toluene show a surplus of 11,000 metric tons, about 11 percent of total supply. The difficulty in deriving accurate data for this product necessitates a large margin of error.

Toluene is one of the basic ingredients in aviation gasoline and TNT. Some stockpiling of toluene is possible. It is also possible to stockpile one of the principal end products, TNT. This usage is reflected primarily by the military demand.

9. Rubber.

A 6-percent surplus, 25,000 metric tons, is shown for rubber in Table 3. In this computation, imports of 65,000 metric tons from outside the Soviet Bloc, the same as for 1951, were included in total supply, since imported rubber would be available under cold-war conditions. The estimated minimum stockpile additions are 50,000 metric tons yearly. The production figure includes reclaimed rubber.

In the absence of imports the USSR would be able to get along only by ceasing to stockpile and by drawing down existing stocks. With continued imports, the USSR has a comfortable margin and can continue to stockpile natural rubber.

10. Antifriction Bearings.

There appears to be a small deficit in bearings. It is well within the margin of error of the data. All bearings estimates are being revised at present, and the inclusion of this estimate is primarily for illustrative purposes.

11. Manpower.

For mid-1955 there is a 2-percent deficit in manpower. Such a balance is predicated upon only a slight increase (200,000) in the agricultural labor force, and increases in the labor force for other sectors corresponding to their increases in output. The manpower supply is increasing at about 3 percent per year. With this factor alone, there would be about a 12-percent deficit for mid-1955. Labor productivity increases by about 5 percent per year in industry. In services and agriculture the rate is considerably lower. Using an over-all rate of 3 percent per year, manpower balances very closely. Although the 1951 manpower estimate represents the number of people in the labor force, the 1955 estimate represents the 1955 labor force adjusted for increased productivity since 1951 and expressed in man-years.

The indication is that manpower, in the aggregate, will not constitute a limiting factor in the fulfillment of Soviet Plan goals. Particular skills and occupational specialties may be a problem, but this test cannot indicate them.

C. Conclusions.

No shortages sufficient to impair the cold-war operations or the fulfillment of Soviet Plan goals for the year ending in mid-1955 appear likely for any of the 14 material resources under consideration.

The Soviet system of planning, which involves a basic and extensive use of elaborate material balance sheets, should be capable of forewarning of shortages in time for remedy, unless the resource is not presently produced in adequate quantities within the USSR or the Soviet Bloc. Natural rubber and copper are the most notable examples of the latter situation. In mid-1955, however, under peacetime conditions, sufficient supplementary quantities of rubber and copper should be available as imports from the non-Bloc area. In addition, it is necessary to keep in mind the data limitations in interpreting these data. Errors may appear in estimates of (1) production and imports, (2) 1951 consumption allocations, (3) indexes of consuming industry growth, or (4) special estimates. Such errors may

be compensatory, but it is also possible that they may be cumulative. As a general rule, conclusions based upon quantitative results not closer than plus or minus 5 to 10 percent must be interpreted cautiously.

Although some resources -- such as petroleum products, steel, copper, ammonia, antifriction bearings, and manpower -- show a deficit or small surplus, it appears that their careful allocation will prevent any limitation in Soviet production. The small size of these deficits, together with the margins of error in the data, makes it uncertain that these shortages actually exist. Although petroleum residuals show a rather sizable deficit, a change in product mix involving less emphasis on petroleum distillates could more than compensate for this shortage.

The largest surpluses appear for aluminum, lead, zinc, and toluene. In the case of aluminum, it is believed that sizable quantities are being allocated to stockpiles, with a large amount of the remainder being assigned to consumer goods production. For lead and zinc, it would seem that their rather high rates of growth since the base year 1951 largely account for their surpluses. Toluene will probably be absorbed in aviation gasoline and TNT and possibly will be stockpiled as TNT.

III. Wartime Demand, Mid-1955 to Mid-1956.

This section outlines the characteristics of the postulated war to begin in mid-1955 and last through mid-1956. There is a discussion of the force levels involved. The method is also indicated by which the demands for strategic economic measures are derived from the nature, magnitude, and duration of the war.

A. Assumptions.

In approaching the problem of estimating the demands of a hypothetical war, certain basic assumptions must be made as to its nature, magnitude, and duration, and as to circumstances surrounding the conflict.

The first controlling decision relates to the size of the forces involved. Because of the experimental nature of the analytical technique to be used, it was decided to hypothesize the use of a maximum military force. Such large forces demand large quantities of resources for their support, and results with the material balance method are more conclusive when the impact is of considerable magnitude.

It is necessary to specify the general condition surrounding the employment of these maximum forces. The assumptions adopted are as follows:

1. Mobilization of military forces would be substantially completed by D-day. This assumption simplifies the calculation of requirements by abstracting from decisions pertaining to the timing of initial and incremental commitment of forces.

2. No significant industrial or economic mobilization would have occurred prior to D-day. This assumption also helps to simplify the problem by indicating that the war would begin by a miscalculation rather than as the result of deliberate planning.

3. Political alignment of the Soviet Bloc would be the same as at present, including the USSR, the European Satellites, and Communist China.

4. Throughout the hypothetical war the level of opposition to Soviet forces would always be sufficient to require the continuous employment of Soviet Bloc forces at long-run rates of activity. This assumption was necessary to avoid the problems associated with war gaming.

5. The goal and objectives of the Soviet Bloc would be such as to require a full-scale general war involving Scandinavia, Western Europe, the Balkans, and the Middle East.

6. The hypothetical war would be "conventional." This assumption avoids certain security classification problems but leads to subsidiary problems, as is explained below.

7. There will be no air damage to the economies of the Soviet Bloc.

8. There will be no accretions to the Soviet Bloc as a result of conquest.

B. Size and Composition of Armed Forces.

The first concrete task involves the specification of size and composition of the forces. The general principle was adopted that, within the limits of the manpower mobilization potential of the Soviet Bloc, the level and composition of forces should be such that the inventory of major military equipment would be substantially exhausted by the initial outfitting of these forces. No attempt was made to prejudge the most likely or probable mobilization level for the Soviet Bloc. Obviously, the choice would depend on many factors outside of the purview of this study, such as the Soviet Bloc estimate of the opposition to be faced. High force

levels and correspondingly high commitment levels were established so as to require large quantities of resources and hence lead to results unclouded by error margins in the data and limitations of the technique.

Ground force commitment levels were established by assuming that 20 to 30 percent of the major equipment inventory would be necessary as pipeline and strategic reserves. Further, it was assumed that Zone-of-Interior forces would be equipped at about 20 percent of combat strength. The remainder of the equipment stocks was assumed to be available for the initial equipping of the committed forces. These assumptions served only as rough guide lines. Some reconciliation was required before ground force levels and their distribution were finally established at approximately 250 rifle, 80 mechanized, and 25 tank divisions committed by the USSR and the European Satellites, plus some 200 Chinese Communist divisions.

For the air forces it was assumed that the maximal force would consist of the continuous employment of all aircraft in military operational units, as well as all trainers and civil aviation. Commitment of these aircraft in support of the ground forces was assumed to be limited to the capacity of airfields available to a "Western" theater, defined to include the areas contiguous to the Soviet Bloc boundary between northern Norway and the Caspian Sea. Airfield capacity was assumed to be sufficient to serve a total of approximately 12,000 aircraft, of which about 7,000 would be single-engine planes. Essentially, this assumption provides for continuous intensive use for most of the Soviet aircraft except for a moderate restriction imposed on the utilization of short-range fighter planes; more of these are available than can presumably be deployed in the West.

For the sea forces the force level was defined as the fleet in being, some 225 major ships and 400 submarines with all auxiliaries and minor craft. The fleet is to be continuously sustained and fully employed.

In applying the general principle of exhaustion of major equipment inventories, difficulties arose because the inventories were not perfectly balanced. Stocks of certain weapons were exhausted while others remained plentiful. As a consequence, larger force levels than those selected could have been outfitted initially. However, these larger forces could have been established only at a considerable sacrifice in equipment standards for the air and ground forces (there apparently is no "mothball" fleet for the sea forces). For example, much of the excess inventory of ground force equipment consists of towed artillery, a good part of which is limited in applicability. In short, the inventory of military equipment in excess of that needed for initial equipment of the large forces

hypothesized in this study, including provision for reserve and "pipeline," is of such a nature that it may safely be ignored.

No attempt was made to reduce demand because of the inventory of consumption items such as petroleum products and ammunition. Instead, it was assumed that the inventory was "necessary and irreducible," and that at the outbreak of war all efforts would be bent toward immediate replacement of consumption and toward augmenting these inventories where possible.

C. Military Demand for Materials.

Having established force levels and, for all practical purposes, having eliminated the equipment inventory, the next step was to estimate current equipment requirements and, through these, material requirements. It was assumed that the postulated force level would be fully sustained for the duration of the war. This being the case, it became necessary to assumed that combat losses would be fully replaced from current production (weapons inventories having been exhausted). It is unlikely that such would be the case in fact, since weapons production could not be increased rapidly enough and perhaps could not even reach the equipment attrition levels implied by the assumed force commitment level. However, the purpose of the project is to illustrate a test of feasibility under rigidly simplified conditions. Thus, the estimate says only that demand would be of a particular magnitude if the postulated combat force levels were in fact maintained fully from current production.

The initial equipment of the forces served as a base on which to apply appropriate attrition and consumption rates. The rates selected were drawn mainly from US historical experience, with modification based upon Soviet military practices. For example, US tank destroyer attrition rates, rather than self-propelled artillery attrition rates, were applied to Soviet light and medium assault guns. It is worth noting again that only attrition from conventional causes is accounted for. Some additional calculations were made to assist in gauging the effect of requirements registered against the automotive equipment industry, the electric and electronic equipment industry, and the construction equipment industry.

Finally, attrition (and consumption) calculated in terms of physical units was translated into the strategic resources required to replace these units by means of input-per-unit-output factors. The input coefficients reflect the net disappearance of resources in the process of producing the items, giving appropriate consideration to the stage of production corresponding to the estimate of resource supply, irrecoverable scrap losses, and indirect consumption in the production process.

Perhaps an example will serve to illustrate the specific steps involved in the process of calculating requirements. The size and composition of the ground forces in use indicated an employment of some 63,000 tanks and assault guns. A variety of attrition rates, depending upon assumption as to the nature of employment, was applied to this base. The result was an indicated replacement requirement for some 70,000 units in the first year of war. This requirement may be expressed as approximately 2.8 million metric tons of tanks and assault guns. Since approximately 85 percent of the weight of Soviet tanks and assault guns is steel, most of it heavy castings, and since about 40 percent of the steel poured in heavy castings is removed in the finishing process, the steel requirement for this type of equipment is roughly 1.4 tons of crude steel per ton of finished equipment. Therefore the requirement for 2.8 million metric tons of tanks and assault guns indicates a requirement for approximately 4 million metric tons of crude steel input. Other requirements were calculated in similar fashion.

A special word of caution should be entered here as to the implications of the assumption made concerning the nature of the war. Ground force activity on a scale sufficient to employ 355 committed divisions for a full year in the Western theatre alone is postulated. This assumption necessarily leads to extremely high replacement requirements for all ground force equipment items, particularly tanks and ammunition. In turn, replacement and consumption requirements for these items result in heavy military demand for steel, chemical explosives, and petroleum distillates. It may be, however, that future wars will not involve the use of ground forces on anything approaching this scale; if so, the operational utility of the results would be severely circumscribed.

To summarize, a full-scale conventional war was postulated, continuing for 1 year in Europe and the Middle East. It was assumed that Soviet Bloc forces would face sufficient opposition to keep this issue in doubt. These Soviet force levels were translated into quantities of replacement and consumption items required for 1 year, by means of appropriate long-run attrition and consumption rates. These requirements were, in turn, translated into underlying basic material inputs. Meanwhile, it was assumed that whatever inventories remained after initial equipping of forces would be held constant. The economy of the Soviet Bloc thus immediately would face the demand generated by attrition. Table 5* summarizes the amounts of the various strategic resources required to sustain the forces under the postulated conditions without regard to whether or not fabricating capacity was available to convert these materials into finished end items.

* Table 5 follows on p. 29.

Table 5

Breakdown by Military Service of Projected Demand for Selected Resources in the Soviet Bloc under Conditions Postulated for a One-Year War Ending Mid-1956 a/

		Army	Navy	Air Force	Total
1. Coal	Thousand MT	32,350	250	3,550	36,150
2. Petroleum Distillates	Thousand MT	7,550	1,970	11,120	20,640
3. Petroleum Residuals	Thousand MT	1,040	2,750	560	4,350
4. Total Petroleum Products	Thousand MT	8,590	4,720	11,680	24,990
5. Electric Power	Million KWH	33,000	1,600	6,000	40,600
6. Crude Steel	Thousand MT	20,130	760	2,630	23,520
7. Copper	Thousand MT	191.0	43.0	35.0	269.0
8. Aluminum	Thousand MT	55.0	27.0	355.0	437.0
9. Lead	Thousand MT	38.0	17.0	2.0	57.0
10. Zinc	Thousand MT	64.0	12.0	6.0	82.0
11. Ammonia (N Content)	Thousand MT	965	25	410	1,400
12. Toluene	Thousand MT	833	34	556	1,423
13. Rubber	Thousand MT				290
14. Antifriction Bearings	Million Units	25.5	Negligible	36.5	62.0
15. Manpower	Thousand Man-Years				21,900

a. The data in this table were derived from the assumptions and by the methods outlined in Section III. They are not intended to be realistic or agreed estimates of wartime demand. Rather they are simply the result of calculations performed on assumed force levels as noted above.

IV. Analysis.

This part of the report consists of preliminary analysis of the impacts of the demands of the specific war activities postulated in Section III upon the Soviet Bloc economy as described in Section II, using the material balance techniques outlined in Section I. The limitations made necessary by assumptions, data, and technique as explained in the previous sections must be borne in mind.

A. Principal Conclusions.

The principal conclusions of the analysis are the following:

1. With respect to the 14 strategic resources studied in this report, the Soviet Bloc economies would probably be able to support the 1-year war activities outlined in Section III.

2. The principal products for which the Soviet Bloc would have great difficulty meeting the demands of the postulated war are (a) petroleum products, (b) steel, (c) toluene, (d) ammonia, (e) bearings, and (f) manpower.

3. Soviet Bloc wartime demands for copper, aluminum, and rubber could be met if the Bloc were willing to draw down the sizable stockpiles that had been slowly accumulated over the postwar period.

4. The lack of steel would require substantial modification of the Soviet Bloc investment program. Additions to assets during the war would occur only in the armaments sector and in industries closely supporting the military program.

5. Agricultural production would suffer little during the postulated war period, but the lack of petroleum products, ammonia, and manpower would force a cutback of agricultural production in the year following the war.

6. Although outside the scope of this analysis, there are clear indications that war activities of the same magnitude lasting more than 1 year would press against the upper limits of Soviet Bloc economic capabilities and would be much more difficult, perhaps impossible, to support.

B. General Analytical Considerations.

The Soviet Bloc, when faced with a war of the magnitude postulated in Section III, would have open to it a number of choices with respect to the arrangement of its economic affairs in meeting the demands of the war. It is not possible through analysis to determine positively what the Bloc would do when faced with war. It is possible, however, to trace the implications of different courses of action. By so doing, it may be possible to eliminate some responses as unreasonable and to select the course, or courses, that seem most likely. For instance, faced with a drastic coal shortage, the USSR might be able to make ends meet only by cutting allocations to either household consumption or electric power stations. In the

minds of the Soviet leaders a cost calculation would be involved, and in the absence of information to the contrary it seems likely that household consumption would suffer most.

Both supply and demand are subject to close control by the authorities in the Soviet Bloc and, within limits, could be altered in an attempt to meet the demands of war. There are two kinds of demands -- (1) war demands and (2) nonwar, or industrial, demands -- both of which must be met out of the supplies which could be made available during the given period of time. In the analysis of the problem it is initially assumed that the war demands are fixed. As can be seen in Section III, however, the war demands are based upon attrition rates applied to a hypothetical force level with a full table of organization and equipment for all military units, and an assumption of unchanged weapons inventories. Hence, if attrition were not as predicated, if all units were not equipped as stated, or if stocks were permitted to fall, the demands upon the economy would not be exactly as computed. Industrial demands upon resources would be changed by reducing the outputs of the consuming industries, in both quality and quantity. It might be possible to substitute a less strategic input and thus maintain the level of output of the industry by deteriorating its quality. In some instances the level of output would fall because the priority of the consuming sector was clearly subordinate to the war demands. Some products made in peacetime might not be made at all in wartime. The nature of the wartime demands and the possibilities for technological change, substitution, elimination, and product deterioration in the industrial sectors, must be considered in making a judgment about the total demand for resources in wartime.

On the supply side there are several possibilities open to the Soviet Bloc. It may be possible to increase the output of the strategic resources. In the period of time under consideration, 1 year, there are limits to what the Bloc could do. By straining capacity to the utmost, it is nearly always possible to obtain some additional output from existing facilities. It must be kept in mind, however, that insofar as it is possible to increase the output of the strategic resources, it is also necessary to supply the facilities providing this output with inputs sufficient to support the higher level of output. There is thus a reciprocal effect upon the demand for these same resources through the necessity of maintaining the output of sectors which both use the strategic resource and provide economic goods used in the manufacture of the strategic resource. Other methods for making supplies available may not involve these indirect effects.

The most obvious method of supplying resources to meet war demands is to use stockpiles which have been accumulated. The Soviet Bloc has substantial stockpiles of copper, aluminum, lead, zinc, and natural rubber. It also might be possible to reduce the magnitude of the supply pipeline for the resource, thus freeing additional quantities of the resource. For instance, about 25 percent of a year's production of steel is in transportation, warehouses, depots, at the fabricating plant, and at the site of use. By tightening controls over this supply pipeline, it might be possible to squeeze out additional steel supplies, although drastic use of this device would run the risk of reducing the flexibility needed in an economy. In war activities of considerable magnitude, it might be felt that some peacetime facilities were unnecessary. Salvage operations on capital equipment and plant facilities could thus increase supplies of some kinds of strategic resources, especially metals. Resources existing in conquered territory might also buttress the indigenous supply to a limited extent but are excluded by assumption from this study. Wartime attrition rates postulate zero recovery and no scrap availability. Nevertheless, some rubber and metals could be obtained from attrited equipment and the resulting scrap added to the total supply insofar as fabricating capacity permits.

It is often not possible to quantify judgments about manipulations and alterations in the supply and demand patterns resulting from the imposition of war demands. Unless the difference between supply and demand is quite significant, therefore, it is unlikely that the material balance technique would yield a firm conclusion with respect to the ability or inability of the Soviet Bloc to meet wartime requirements. The errors in data are such that a reasonably close balance under wartime conditions makes it very difficult to draw positive conclusions.

Table 6* contains the basic data used in analyzing the Soviet Bloc capabilities to meet the demands for the 14 strategic resources under the conditions of a 1-year war beginning in mid-1955. Table 6 shows the supply and demand position before wartime alterations in the structure of the economy have taken place. It is assumed that non-Bloc trade would disappear completely and that Soviet, European Satellite, and Chinese Communist resources would be freely interchangeable. The wartime military demand applies to the Soviet Bloc effort as a whole. It is not possible to break down wartime demand into the three areas, nor is it possible to analyze in detail the prewar structure of each of the three areas.

* Table 6 follows on p. 33.

TABLE 5

PROJECTED SUPPLY AND DEMAND POSITION FOR SELECTED RESOURCES IN THE SOVIET BLOC UNDER CONDITIONS POSTULATED FOR A CEA-JIAS WAR BEGUN MID-1956

		Supply and Stockpiles						Demand							Total Demand Compared with Total Supply and Stockpiles			Total Demand Compared with Total Supply			Total Supply and Stockpiles if Wartime Military Demands Are Met		Total Supply if Wartime Military Demands Are Met	
Commodity	Units	USSR	European Satellites	Communist China	Total Supply Available	Stockpile Drawdown	Total Supply and Stockpile Drawdown	Estimated Industrial Demand Year Ending Mid-1956	Total	Net of Exports from Industrial Supply, USSR	Industrial Demand, Rest of Bloc	Industrial Demand, Communist China	Total Industrial Demand, Sino-Soviet Bloc	Wartime Military Demand, Sino-Soviet Bloc (Assumed Same as Peacetime)	Total Demand, Sino-Soviet Bloc	Initial Surplus	Initial Percent Surplus	Initial Deficit	Initial Percent Deficit	Initial Surplus	Initial Percent Surplus	Initial Deficit	Initial Percent Deficit	Quantity	As a Percent of Total Industrial Demand, Bloc	Quantity	As a Percent of Total Industrial Demand, Bloc	Primary Military Deficit
1. Coal	Thousand MT	393,000	418,000	92,900	895,300	0	895,300	96.1	415,000	394,000	99.8	237,000	51,700	903,200	36,130	939,430			44,130	5			44,130	5	859,430	95	859,430	95	34,790
2. Petroleum Distillates	Thousand MT	38,640	10,230	300	49,170	0	49,170	88.8	39,800	35,340		3,300	1,300	39,940	20,640	60,580			11,410	23			11,410	23	38,330	71	28,330	72	3,125
3. Petroleum Residuals	Thousand MT	18,750	5,800	350	25,120	0	25,120	90.3	24,500	22,130		1,200	200	23,520	4,350	27,870			2,750	11			2,750	11	20,770	88	20,770	88	1,975
4. Total Petroleum Products	Thousand MT	57,390	16,030	650	74,290	0	74,290	89.3	64,300	57,460		4,500	1,500	63,460	24,990	88,450			14,160	19			14,160	19	49,300	78	49,300	78	5,000
5. Electric Power	Billion KWH	198,000	69,000	14,100	281,100	0	281,100	94.2	164,500	155,000	98.9	79,100	13,800	248,000	40,600	288,600	13,000	5			13,500	5			266,900	106	266,900	106	6,700
6. Crude Steel	Thousand MT	45,500	13,050	2,730	60,180	0	60,180	96.5	46,000	44,390	97.3	11,630	2,660	58,680	23,320	82,000			22,820	37			22,820	37	36,660	62	36,660	62	1,320
7. Copper	Thousand MT	520.0	77.0	12.5	609.5	304.0	913.5	84.8	503.0	443.5	83.4	64.0	10.5	521.0	269.0	790.0	123.5	17					177.5	29	680.5	131	340.5	66	27.5
8. Aluminum	Thousand MT	623.0	165.0	7.0	795.0	605.0	1,400.0	68.1	375.0	345.5	53.3	86.0	4.0	437.5	437.0	874.5	526.0	38					77.0	10	968.5	220	360.5	82	59.5
9. Lead	Thousand MT	275.0	120.5	14.5	410.0	138.0	548.0	98.6	214.0	174.5	69.8	77.0	14.0	277.5	97.0	374.5	173.5	38			70.5	16			472.0	175	343.0	126	6.0
10. Zinc	Thousand MT	204.0	214.0	8.0	426.0	205.0	631.0	87.6	230.0	208.0	74.1	47.5	5.5	329.0	82.0	440.0	191.0	39			76.0	15			637.0	170	434.0	102	5.0
11. Arsenic (W content)	Thousand MT	730	665	95	1,490	0	1,490	76.4	600	420	70.4	470	65	955	1,400	2,355					86.5	58			865	58	90	9	170
12. Tobacco	Thousand MT	105	30	4	139	87	226	91.6	98	58	53.0	16	2	76	1,423	1,499			1,273	563			1,360	976	-1,107	-1,873	-1,264	-1,689	15
13. Rubber	Thousand MT	370	130	5	485	350	835	74.1	440	325	69.8	75	5	405	290	695	140	17					290	43	545	135	195	48	55
14. Antifriction Bearings	Million Units	142.5	29.5	2.0	174.0	0	174.0	70.0	121.0	105.5	71.2	23.0	1.5	118.0	62.0	180.0			16.0	9			16.0	9	112.0	88	112.0	88	69.5
15. Manpower	Thousand Man-Years	107,700	50,400		158,100	0	158,100	95.6	107,000	102,300	96.6	18,700		121,000	23,900	172,900			14,800	9			14,800	9	136,200	90	136,200	90	4,600

In Table 6 the supply figures are estimates of production at capacity for the year ending in mid-1956, except for copper, lead, and zinc, for which production estimates rather than estimates of smelting capacity were used.

Demands during wartime are in two categories. The war demands were taken as given in Section III. Industrial demands are all of the other demands of the economy; they represent the demands of the consuming industries of the Soviet Bloc, assuming that prewar conditions prevailed, but not including the demands of the military establishment and armaments sector, stockpiling, and exports. For the USSR, industrial demand was computed by applying the ratio of Soviet industrial demand to total demand for the year ending in mid-1955 to an estimate of Soviet total demand under peacetime conditions for the year ending mid-1956. The latter was derived by extrapolating through mid-1956 the curve of Soviet total demand, 1951 to mid-1955. Since there are no detailed industrial demand data for the European Satellites and Communist China, the ratio of Soviet industrial demand to total supply for the year ending in mid-1955 was applied to production estimates for the European Satellites and Communist China for the year ending in mid-1956. The industrial demand for the USSR, European Satellites, and Communist China, plus the Soviet Bloc wartime demand, equals total demand. As a check on the general magnitudes involved, industrial demand was computed in several other ways. The ratio of industrial to total demand for the USSR in mid-1955 was applied to production in the three areas for mid-1956. Mid-1955 industrial demand for the USSR could be used as an estimate of 1956 industrial demand, and the ratio of Soviet industrial to total demand for mid-1955 applied to mid-1955 European Satellite and Chinese Communist production. These different ways of determining industrial demand by the use of aggregative ratios made no significant difference in the final results.

It must be kept in mind that the industrial demand figures in Table 6 refer to a situation in which the prewar structure of the economy is unchanged. This is the situation a Soviet planner might face at the outbreak of war: consumption by all industries at prewar rates plus wartime demand. From this base he would start making decisions as to how much to cut and where to expand or contract. The initial surplus and deficit columns in Table 6 reflect this tentative position of the economy at the outbreak of war.

C. Product Analysis.

1. Copper, Aluminum, Lead, Zinc, and Rubber.

Being armed with this information, it is possible to make some general comments about the sort of impact the postulated war would have upon the economies of the Soviet Bloc. First, certain resources can be eliminated on the basis that supply is adequate to meet the demands for this period of time. This situation exists clearly for copper, aluminum, lead, and zinc, as well as for rubber, provided that stockpiles are assumed freely available for use. In each case, supply plus stockpiles would be adequate to meet the demand and in some cases would considerably exceed it. Even if it is assumed that estimates of stockpiles are too high, there is a comfortable margin for these commodities. For lead and zinc, supply (without stockpiles) would be more than sufficient to cover industrial and military demands. This result suggests weakness in some of the underlying data (either production too high or industrial consumption and military demands being considerably underestimated), since it is not likely that an economy would show a surplus of any resource under the initial assumptions postulated here. It is almost certain that in wartime, strenuous efforts to economize nonferrous metals and rubber would result in the ability to allocate a larger proportion to the war effort. In addition, it must also be remembered that accretions from conquered territories would represent a substantial addition to the Bloc supply.

2. Petroleum Products.

The Soviet Bloc would have a total supply (zero stockpiles) of 74,290,000 metric tons of petroleum products as compared with a total demand of 88,450,000 metric tons, and this would have an initial deficit of 14,160,000 metric tons, or 19 percent. The deficit would consist of 11,410,000 metric tons for petroleum distillates and 2,750,000 metric tons for petroleum residuals. It would have to be made up mainly through reduced allocations to agriculture, motor transportation, and trade, services, and households. Demand in wartime is particularly strong for high-octane aviation gasoline, motor gasoline, jet fuel, and possibly diesel fuel. For all petroleum products the wartime military demand would exceed the peacetime military demand by about 20 million metric tons.

Although there is considerable flexibility in the mix of petroleum products, a change in the mix cannot relieve the over-all

shortage. Hence, substantial curtailment of peacetime allocations is necessary. The mid-1955 allocation pattern is as follows: agriculture and food products, 34 percent; motor transportation, 24 percent; trade, services, and households, 14 percent; construction, 7 percent; the peacetime military establishment, 9 percent; and the rest of the economy, 12 percent.

Reduction of any of these allocations would present serious problems. It would be possible to reduce the tractor fuel allocation to agriculture by about 4 million metric tons, about one-third of the petroleum input of agriculture. Motor transport would suffer a cutback of at least 1.5 million metric tons of distillates. Allocation to trade, services, and households would be reduced about 3 million metric tons, mainly distillates. Construction would have to forego 2 to 3 million metric tons, and industry, about 1 million metric tons. By cutting back allocations to these industrial sectors it would be possible to make good the severe shortage. Such a balance could not be achieved, however, without imposing a significant limitation upon the petroleum-consuming sectors.

3. Steel.

The Soviet Bloc would be deficient by 22 million metric tons of steel. Total supply would be 60,180,000 metric tons and demand would be 82,200,000 metric tons. A shortage of this magnitude would requires (a) complete revision of Bloc investment programs, (b) diversion of steel from the production of building machinery and equipment and from construction, to the production of military end items, and (c) only the most essential investment uses in the armaments sector and closely allied industries.

It might not be necessary for the Soviet Bloc to make good on all the postulated demands for steel, because of a lack of fabricating facilities in the steel-consuming industries. If sufficient fabricating facilities were not available, then the indicated amount of steel would not be needed. This factor, however, should not be overemphasized. The nature of the demands for steel is such that no highly technical facilities would be needed. About two-thirds of the demand would be for artillery shells and casings. About one-third would be for other equipment, especially tanks and vehicular equipment.

The supply of steel could be enhanced slightly by operating existing facilities at a maximum and by reducing somewhat the substantial pipeline of steel products. In addition, the use of scrap metal from damaged equipment and from shell casings might help some. This factor would alter only the scrap-pig ratio; final output would still depend upon ingot capacity. However, such increases in supply could not make up the 22,020,000-ton deficit.

The peacetime demands for steel are dictated by the investment pattern. In wartime, this investment pattern would be distorted considerably and the total amount of investment would be reduced. It is improbable that 14 percent of all steel would continue to be allocated to construction in wartime. Miscellaneous manufacturing industries, including consumer durables, would also have greatly reduced allocations. Unlike the US, however, the USSR does not have a huge automobile industry as a potential source of steel in wartime. It is not possible to list in detail the consumers that would suffer reduced allocations and to estimate by how much they would suffer, but it seems possible that with a smaller investment program, reallocations, some increase in supply, and the possibility that all the war demands would not occur, the Soviet Bloc could make sufficient steel available to meet requirements.

4. Ammonia.

The demand for ammonia in wartime derives from the need for explosives, in which ammonia is a primary input. Total supply for the Soviet Bloc would equal 1,490,000 metric tons, whereas total demand is estimated at 2,355,000 metric tons, with a resulting deficit of 865,000 metric tons. The wartime military demand would be 1,400,000 metric tons, or nearly as much as would be available in the Bloc, assuming that all plants operated at capacity. The only way to make up the deficit is to cut off practically all consumers of ammonia except the military. This is not technically possible, although nearly all nonmilitary allocations can be substantially reduced. Agriculture, where the ammonia is used in fertilizer, primarily for technical crops, is the largest single user in peacetime. Only by stripping agriculture would it be possible for the Bloc even to approach a balanced position for ammonia.

The possibilities for increasing the output of ammonia are quite limited. It takes 4 or 5 years to bring in a new ammonia plant, and the estimates given in Table 6 already are capacity production estimates.

5. Toluene.

Toluene is another important ingredient in some explosives and would be seriously short in the Soviet Bloc. Total supply plus stockpiles would be only 226,000 metric tons, as compared with a Bloc total demand of 1,499,000 metric tons, six times the estimated supply. The deficit is so great that even with a revision of the prewar consumption pattern, production plus stockpiles would not be adequate to meet the estimated wartime demand. There is a considerable amount of flexibility, however, in the percentage of toluene that is required in various explosives and the extent to which other explosives can be substituted. For instance, the demand estimate was computed by assuming that toluene would be 50 percent of the weight of the ingredients going into TNT, a percentage that could be reduced considerably. Furthermore, TNT could be replaced to some extent by picric acid, cyclonite, and possibly other newer explosives.

Toluene production could be increased more easily than production of some other strategic commodities, since toluene can be derived from oil refining and from the coke-chemical industry by the addition of some specialized equipment. In addition, there is some indication that the Soviet Bloc has a substantial stockpile of TNT. Therefore, although there would be a shortage of toluene, the possibility that its effects could be avoided is great enough to conclude that the postulated 1-year war could be carried out.

6. Manpower.

The manpower data given in Table 6 are misleading to the extent that a productivity adjustment has been used to make all figures comparable. The actual military manpower demand is for 21.9 million men in the USSR and the European Satellites. This clearly would result in a strain on all sectors of the economy. Chinese Communist manpower has been eliminated from Table 6.

D. Implications of the Analysis.

1. Impact on Industry.

Of the 14 commodities under consideration, the steel shortage would have the most serious impact on industry, although smaller deficits in antifriction bearings, petroleum products, and manpower would also present problems. The steel scarcity would necessitate a revision of the investment program, probably with the purpose of bringing into

production only those plants that were strategically important and capable of completion in a short space of time. Therefore, production growth through the construction of new facilities and new machinery would be limited to only a few of the highest priority products. In addition, steel allocations for nonstrategic production, such as consumer goods production, would be eliminated, and allocations to many other consuming industries revised on a priority basis.

The decrease in petroleum products might put a strain on the intra-urban transport facilities of industry. It would also be necessary to withdraw from industry more than 1 million metric tons of petroleum residuals. Furthermore, in order to man their armed forces, the Soviet Bloc countries would find it necessary to draft skilled and semiskilled workers from industry. The reorganization of industry and changes in the investment program would tend to release workers to the armaments sector and to the armed forces.

2. Impact on Agriculture.

Petroleum has been used in increasingly large quantities in agriculture in the Soviet Bloc in peacetime and has become an essential ingredient of agricultural technology. In recent years, new agricultural machinery has been specifically designed to be used with tractors, and animal draft power has been steadily declining. The trend toward mechanization would have to be interrupted in the event of war. The limited animal draft power would have to be pressed to the limit and old agricultural implements again put into service, since much of the new machinery cannot be used with animals.

After the outbreak of war, agriculture would receive practically no ammonia and considerably less petroleum, but the harvest would not be seriously affected during the first year.

The war is postulated to begin on 1 July 1955, a time when fertilizing and planting for that year's crops would have been largely completed. Decreased petroleum supplies and probably a slight pinch in manpower would cut down on the cultivation possible and hamper harvesting somewhat, but would not reduce the total harvest enough to interfere with a 1-year war. Food reserves in the USSR are substantial. About 20 percent of the grain is in reserve. This, plus the annual carryover, amounts to about 1 year's food supply in grain.

The virtual elimination of ammonia allocations to agriculture would affect industrial crops, the main users of ammonia, starting with the second year's harvest, but would not affect food crops unless food-crop fertilizers were substituted on technical crops having heavy wartime demand.

At the same time that a lack of petroleum would be putting pressure on the agricultural economy, manpower would be drafted away to serve in the armed forces or in munitions industries. More than one-half the labor force is in agriculture, and there is no reason to believe that the draft would be proportionately lighter in agriculture. Indeed, it is possible that the manpower call would hit agriculture proportionately harder than it would industry. A manpower withdrawal from agriculture would reduce agricultural output somewhat, but the impact would not necessarily be additive to that already imposed by the lack of petroleum. In addition, it might be possible to alleviate a manpower shortage in agriculture by using Zone of Interior troops to help with the peak harvesting requirement. This was done by several nations, including the USSR, in World War II and is a method for avoiding a loss in harvest, even though it might be necessary to lengthen the harvest season.

3. Relaxation of Assumptions.

Several assumptions have been made which have a direct and immediate effect upon the conclusions of this analysis. In brief, the assumptions are as follows:

(a) A 1-year war beginning in mid-1955.
(b) The use of only conventional and not atomic or other nonconventional weapons.
(c) No allowance for damage to the Soviet Bloc.
(d) No economic benefit from the accretion of territory to the Bloc.
(e) Military stockpiles held at a constant level.

Changing any of these assumptions would change the conclusions. For instance, if military stocks were permitted to fall below their present level and were held constant at a lower level, some of the military demands would disappear. The massive land war postulated in Section III results in huge quantities of many inputs, including those which were found to be in short supply in wartime. If a different kind of war were to be fought, then the economy would be called upon for support by other industries, and the critical sectors outlined above

might not be a problem at all. Accretions from conquered areas, both in the form of produced goods and in the form of capital facilities and manpower, might substantially offset many of the heavy demands of the war.

The assumption of a 1-year war with no damage to the economies of the Soviet Bloc is a highly restrictive assumption and quite unrealistic. Even if the war in fact lasted 1 year, the economic planners could not know this in advance, and the indeterminacy would affect their plans. Furthermore, it does not seem reasonable to suppose that Western countries would leave the Soviet Bloc countries undamaged at home. If these assumptions are changed, a much more elaborate analysis and more information is needed. It is clear, however, that a war of the same magnitude extending beyond 1 year would represent a much more serious threat to the economic and industrial support of the Bloc economies. Add to this a war in which damage was inflicted upon the economies of the Soviet Bloc, and there develops the distinct possibility that the Bloc could not stand up under the economic strain imposed upon it. Nonetheless, under the assumptions of this report, the Bloc could support the specified military activities.